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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,938	06/27/2003	Chan-Jung Park	1594.1258	4442
21171	7590	08/18/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			MICHENER, JENNIFER KOLB	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,938

Applicant(s)

PARK ET AL.

Examiner

Jennifer K. Michener

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,9,10 and 19-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 4-7, 9-10, and 19-23 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 4-7, 9-10, and 19-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The term "non-fibrous" is new matter. Examiner is unable to find, in the originally-filed disclosure, support for the term "non-fibrous". While examples of surfaces are provided that are indeed non-fibrous in nature, such examples do not provide broad support for all conceivable non-fibrous surfaces.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-7, 9, and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al.

Yamaguchi et al. discloses a method of providing antibacterial activity to a surface of an aluminum building material using nano-sized metal particles, comprising: coating a volatile electroplating solution comprising nano-sized metal particles of copper, silver or platinum; and then baking the coated body such that the nano-sized metal particles are deposited on the body (col. 10, lines 45-59). Yamaguchi et al. states that the size and shape of the fine antibacterial metal particles are the same as for fine particles of photocatalytically active semiconductor particles also included in the coating. Yamaguchi et al. also teaches that the antibacterial metal may be applied as a coating by means of sol-gel method or plating method, in addition to others (col. 7, lines 18-23), followed by subsequent steps of washing with water and baking (col. 8, lines 15-19). Example 3 illustrates that the electroplating coating is a volatile solution, and that baking occurs at 190 C for 40 minutes. Some degree of drying will occur after coating and before thermal treatment.

While Yamaguchi et al. discloses an exemplary baking step at 190 C for 40 minutes in Example 3, this temperature is merely exemplary and is not limiting. It is well known that temperature is a result-effective variable depending upon the length of time of heating, the particular materials used, desired coating characteristics, etc. It is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

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The substrates of Yamaguchi are non-fibrous and are coated with Ag or Cu (col. 2, lines 60-67) metal particles, as required by the amended claim.

As to claims 5-6, Yamaguchi et al. teaches that the total amount of antibacterial metal particles plus semiconductor particles is in the range of 0.01-100% by weight (col. 10, lines 59-67). The range of 0.01-100% corresponds to $100-1 \times 10^6$ ppm, therefore Yamaguchi et al. teaches a range overlapping the claimed range. Overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Yamaguchi et al.'s concentration range that corresponds to the claimed range. *In re Malagari*, 184 USPQ 549 (CCPA 1974).

As to claim 9, Yamaguchi et al. discloses that its treated aluminum building material may be any building structure or fixture, for example in a hospital building (col. 1). It would have been obvious to have coated any objects in a hospital building that are typically made of aluminum, such as an air conditioner, refrigerator, or washing machine, with an antibacterial coating of Yamaguchi et al.'s invention with the expectation of improved antibacterial activity within the hospital.

As to claims 19-21, Yamaguchi et al. teaches that the size of the fine particles is preferably in the range of 5-10 nm (col. 13, lines 38-40).

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5. The rejection of claims 1, 4-8, 10, 12-15, 17, 19-22, and 24 under 35 U.S.C. 103(a) as being unpatentable over Nishida et al. has been withdrawn due to either cancellation of claims (claims 8, 12-15, 17, and 24 have been canceled) or the addition of the term "non-fibrous" to the independent claim.

Examiner notes that the rejection will be reinstated upon removal of the offending term.

Response to Arguments

6. Applicant's arguments filed 6/8/2005 regarding the Yamaguchi reference have been fully considered but they are not persuasive.

Applicant argues that Yamaguchi requires electrodeposition, a coating film, and an anodic oxide film, all of which are not required by Applicant.

Examiner notes that Applicant's broad "comprising" language is inclusive of additional process steps and/or materials, as outlined in the Final Office Action.

Applicant argues that Yamaguchi does not teach coating with particles of Ag, Al, Cu, Fe, Zn, Cd, Pd, Rh, or Cr.

Examiner disagrees. Yamaguchi teaches Ag or Cu particles in col. 2, lines 60-67.

Applicant's arguments regarding the Nishida reference have been fully considered and are persuasive. The rejection over Nishida has been withdrawn.

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However, Examiner notes that the withdrawal of the Nishida rejection was necessitated by Applicant's addition of the term "non-fibrous", deemed new matter above. Therefore, upon removal of the new matter, the Nishida reference will be reinstated.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ichimura and Nesbitt teach the use of antimicrobial powders as coatings supplied in solution to substrates and the use of thermal/heat treatment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer K. Michener whose telephone number is (571) 272-1424. The examiner can normally be reached on Tuesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jennifer K Michener
Primary Patent Examiner
Art Unit 1762
August 14, 2005

jkm